Selected Abstracts from the December Issue of the European Journal of Vascular and Endovascular Surgery

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The Influence of Aging on the Prognostic Value of the Revised Cardiac Risk Index for Postoperative Cardiac Complications in Vascular Surgery Patients

Welten G.M.J.M., Schouten O., van Domburg R.T., Feringa H.H.H., Hoeks S.E., Dunkelgrün M., van Gestel Y.R.B.M., Goei D., Bax J.J., Poldermans D. Eur J Vasc Endovasc Surg 2007;34:632-8.

Objective: The Lee-risk index [Lee-index] was developed to predict major adverse cardiac events [MACE]. However, age is not included as a risk factor. The aim was to assess the value of the Lee-index in vascular surgery patients among different age categories.

Methods: Of 2 642 patients cardiovascular risk factors were noted to calculate the Lee-index. Patients were divided into four age categories; ≤ 55(n = 396), 56–65(n = 650), 66–75(n = 1 058) and >75 years (n = 538). Outcome measures were postoperative MACE (cardiac death, MI, coronary revascularization and heart failure). The performance of the Lee-index was determined using C-statistics within the four age groups.

Results: The incidence of MACE was 10.9%, for Lee-index 1, 2 and ≥3; 6%, 13% and 20%, respectively. However, the prognostic value differed among age groups. The predictive value for MACE was highest among patients under 55 year (0.76 vs 0.62 of patients aged > 75). The prediction of MACE improved in elderly (aged > 75) after adjusting the Lee-index with age, revised risk of operation (low, low-intermediate, high-intermediate and high-risk procedures) and hypertension (0.62 to 0.69).

Conclusion: The prognostic value of the Lee-index is reduced in elderly vascular surgery patients, adjustment with age, risk of surgical procedure, and hypertension improves the Lee-index significantly.

The Relationship between Hospital Case Volume and Outcome from Carotid Endartectomy in England from 2000 to 2005

Holt P.J.E., Poloniecki J.D., Loftus I.M., Thompson M.M. Eur J Vasc Endovasc Surg 2007;34:646-54.

Objectives: To assess the outcome of carotid endarterectomy in England with respect to the hospital case-volume.

Methods: Data were from English Hospital Episode Statistics (2000–2005). Admissions were classified as elective or emergency. Risk-adjusted data were analysed through modelling of death rate, complication rate and length of admission with regard to the year of procedure and annual hospital volume of surgery. Hospitals with elevated death rates were identified and the evidence quantified that they had outlying mortality rates.

Results: There were 280 081 diagnoses of extra-cranial atherosclerotic arterial disease in which 18 248 CEA were performed. The mean mortality rates were 1.04% for elective and 3.16% for emergency CEA. A volume-related improvement in mortality ($p = 0.047$) was seen for elective CEA. Length of stay decreased as annual volume increased for elective and emergency CEA ($p < 0.001$). 20% of the operations were performed in 67.1% of the hospitals, each of which performed fewer than 10 CEA per annum. A number of hospitals had elevated death rates.

Conclusions: Volume-related improvements in outcome were demonstrated for elective CEA. Minimum volume-criteria of 35 CEA per annum should be established in England. Hospitals performing low annual volumes of surgery should consider arrangements to network services.

Carotid Artery Stenting in a Single Center: Are Six Years of Experience Enough to Achieve the Standard of Care?

Setacci C., Chisci E., de Donato G., Setacci F., Sirignano P., Galzerano G. Eur J Vasc Endovasc Surg 2007;34:655-62.

Objectives: This study aims to determine safety, short and mid-term outcomes of Carotid Artery Stenting (CAS) and Endarterectomy (CEA) during the last 6 years in a single vascular surgery center.

Methods: We retrospectively reviewed 2624 consecutive carotid revascularizations performed between December 2000 and December 2006 in 2176 patients with severe carotid artery stenosis (symptomatic ≥70%, asymptomatic ≥80%), of which 1589 were CEA and 1035 CAS. Patients were followed up at 1, 3, 6 and 12 months after the procedure and then yearly.

Results: The percutaneous procedure was successful in 99.2% of the cases. No intra-procedural death occurred. The overall death and stroke rates at 30 days, 1 year and 3 years were 1.54%, 2.86%, 7.43% in the CAS group and 2.07%, 3.55%, 6.95% in the CEA group, respectively *(p value not significant in any case)*.

Conclusions: At our vascular surgery centre the results of CEA and CAS are similar. CAS has become our standard of care in preventing strokes and is an effective alternative to CEA for low-risk patients as well.

Endovascular Treatment (EVT) of Acute Traumatic Lesions of the Descending Thoracic Aorta – 7 Years' Experience

Orend K.H., Zarbis N., Schelzig H., Halter G., Lang G., Sunder-Plassmann L. Eur J Vasc Endovasc Surg 2007;34:666-72.

Objectives: To present a single centers' 7-year experience in the endovascular treatment of acute traumatic lesions of the descending thoracic aorta (ATL of the DTA).

Materials & methods: Between March 1999 and December 2006, 34 consecutive acute traumatic lesions of the descending aorta (23 men, mean age 44 years) were treated endovascularly. Stentgrafts used were TAG Excluder, Zenith TX2 and Talent. In 23 patients the Left Subclavian Artery (LSA) was covered. Mean procedural duration was 20 to 75 minutes.

Results: Exclusion of the rupture site was achieved in all cases with no conversion to open surgery. Overall 30-day mortality was 8.8%. Two patients died on post operative day (pod) 1 and one on pod 22 from cranial injuries. No death or neurological deficit related to the endovascular treatment was reported. Four type I endoleaks required treatment either by balloon reexpansion (n = 2) or by additional stentgraft implantation (n = 2). In two patients the stentgraft collapsed totally several days postoperatively. Two patients required secondary surgical procedures (iliac access complication and revascularisation of the left subclavian artery n = 1). The average follow-up was 43.8 months (1–93 months). No stentgraft related abnormality has been subsequently documented.

Conclusions: The endovascular treatment of ATL of the DTA may offer the best means of therapy in a polytrauma patient.

Endovascular Ruptured Abdominal Aortic Aneurysm Repair (EVRAR): A Systematic Review

Harkin D.W., Dillon M., Blair P.H., Ellis P.K., Kee F. Eur J Vasc Endovasc Surg 2007;34:673-81.

Background: To review evidence supporting the use of endovascular ruptured aneurysm repair (EVRAR) for treatment of ruptured abdominal aortic aneurysm (RAAA).

Methods: A systematic review of the medical literature was performed for relevant studies. We searched a number of electronic databases and hand-searched relevant journals until November 2006 to identify studies for inclusion. We considered studies in which patients with a confirmed ruptured abdominal aortic aneurysm were treated with EVRAR, which reported endpoints of mortality and major complications.

Results: There was 1 randomised controlled trial (RCT), 33 non-randomised case series (24 retrospective and 9 prospective) reports were identified comparing EVRAR (n = 891) with conventional open surgical repair for the treatment of RAAA. Whilst no benefit in the primary outcome of mortality was noted in the only RCT, evidence from non-randomised studies suggest that EVRAR is feasible in selected patients, where it may be associated with a trend towards reductions in blood loss, duration of intensive care treatment, early complications, and mortality.

Conclusions: For the treatment of symptomatic or ruptured abdominal aortic aneurysm, emergency endovascular repair (EVRAR) is feasible in selected patients, with early outcomes comparable to best conventional open surgical repair for the treatment of RAAA.

Occupational Capacity Following Surgical Revascularization for Lower Limb Claudication

Vohra R.S., Coughlin P.A., Gough M.J. Eur J Vasc Endovasc Surg 2007; 34:709-13.

Objectives: Little is known about patient's ability to return to work following surgical revascularization for lower limb claudication. A retrospective cohort study was performed to determine the effect of lower limb surgical revascularization on subsequent employment status.